Strengthening the Pipeline of Master's-level Scientific and Laboratory Personnel in Stem Cell Research

Grant Award Details

Strengthening the Pipeline of Master's-level Scientific and Laboratory Personnel in Stem Cell Research

Grant Type: Bridges II

Grant Number: EDUC2-08390

Investigator:

Name:	Lisa Hammersley
Institution:	Cal State Univ, Sacramento
Type:	PI

Award Value: $2,421,720

Status: Active

Grant Application Details

Application Title: Strengthening the Pipeline of Master's-level Scientific and Laboratory Personnel in Stem Cell Research

Public Abstract:

The applicant institution will partner with a CIRM Major Facility to create a comprehensive curricular program that will produce 50 masters degree graduates with the scientific foundation, research experience, practical laboratory skills and motivation to pursue careers in stem cell research. Graduates of the masters program will develop knowledge and skills suitable for basic research as well as its translation into clinical applications for patients. Graduates will help fill the high demand for laboratory managers and other research-support professionals in a growing number of laboratories devoted to stem cell research and translation to the clinic. Rather than a traditional, independent master's thesis project, students engage in activities specifically intended to improve the professional preparation of graduates desiring industry or laboratory careers in applied biosciences.

The masters program builds upon curricular strengths in cellular and molecular biology at the applicant institution and the outstanding research facilities of the CIRM Major Facility located nearby. The twenty-month program of study consists of graduate courses taken at the applicant institution and an internship at the CIRM Facility. During the eight -month internship, student interns will work with mentors as part of disease teams that bring students and research scientists together with clinicians to work toward cellular therapy trials. In addition, Students will receive advanced training during a five-day Stem Cells Techniques Training Course at the CIRM Major Facility. Education enhancement activities will include a six-week lecture course entitled Introduction to Cellular Therapy, a short course in Good Manufacturing Practice and a seminar series with invited speakers from renowned laboratories. Proximity of the Home and Internship Host Institutions will facilitate program coordination, and ensures that students have ready access to mentors from both institutions.

The applicant institution has considerable potential to attract students from underserved populations. The applicant institution will advertise its masters degree program to students attending four-year institutions of higher education throughout California.

With a combination of research and professional skills, graduates will fill roles vital to furthering the progress of stem cell research. Graduates experienced in team-based research and GMP will have high potential for career advancement, transitioning easily beyond entry-level positions or into doctoral programs. The intense, twenty-month program moves students quickly into the workforce. Professionally oriented masters programs, with their limited durations, practical training and potential for advancement have proven especially appealing to women and minority students. This masters program will help widen participation in stem cell research and the development of novel therapies.

Statement of Benefit to California:	Regenerative Medicine educational programs and research training will define and implement unique interactions between universities, medical research institutions, and the greater community. Technological advancement has created exponential growth and development in the medical arena. Each generation of scientists is shaped by many social and educational factors. CIRM's funding and training institutions play a critical role in accelerating the rate at which qualified members join the field of stem cell research which, in turn, accelerates the rate at which human stem cell treatments and cures begin mending the current untreatable diseases that plague the population of California and the world beyond. Over the last 6 years, it has been shown that the CIRM Bridges students interning at laboratories within the Stem Cell Bridges Program significantly contributed to the development of stem cell science currently being translated into clinical applications for devastating disorders such as Huntington's disease, critical limb ischemia, non-healing diabetic ulcers, liver disease, kidney and bladder disease, HIV and epidermolysis bullosa. With this known track record, it is anticipated that the new Bridges students with their training, education and skills will have their own major impact in our stem cell laboratories furthering the clinical translation of current stem cell applications., Training now includes students becoming facile in the new approaches to patient care and in ways to educate patients about the new treatments and applications of human stem cell therapy, in addition to their technical training, Carrying their specialized and focused education it is expected that CIRM Bridges students will become leaders in medical fields and industry as stem cell applications become commercialized therapies that routinely benefit patients in the exciting new field of regenerative medicine in health care.